

04/02/14 Agenda

- Remediation Packet for Unit 7 is on line
 - Due 4/7
- Review Homework (p8)
 - Worksheet 5 - Greatest Common Factor
- Polynomials - day 8 - Factoring Trinomials
- Homework
 - Worksheet 6 - Factoring

Warm Up



Put your name on a slip of paper.

Put each equation in standard form,
then state the degree (the degree of the highest monomial)

$$\boxed{+4x} \boxed{-1} \boxed{+7x^2} \boxed{+5x^3}$$

$$5x^3 + 7x^2 + 4x - 1$$

Degree 3

$$\boxed{+5x^2} \boxed{-3x} \boxed{+9x^3} \boxed{-15} \boxed{+2x^2}$$

$$9x^3 + \underline{5x^2 + 2x^2} - 3x - 15$$

$$9x^3 + 7x^2 - 3x - 15$$

Degree 3

List all the factors of:

$$\begin{array}{l}
 \underline{12} \\
 1 \mid 12 \\
 2 \mid 6 \\
 3 \mid 4
 \end{array}
 \quad
 \begin{array}{l}
 \underline{4} \\
 1 \mid 4 \\
 2 \mid 2 \\
 -1 \mid -4 \\
 -2 \mid -2
 \end{array}
 \quad
 \begin{array}{l}
 \underline{-7} \\
 1 \mid -7 \\
 -1 \mid 7
 \end{array}
 \quad
 \begin{array}{l}
 \underline{-36} \\
 -1 \mid -36 \\
 1 \mid 36 \\
 -2 \mid -18 \\
 2 \mid 18 \\
 -3 \mid -12 \\
 3 \mid 12 \\
 -4 \mid -9 \\
 4 \mid 9 \\
 -6 \mid -6
 \end{array}$$

The Quadratic Trinomial:

$$\underline{A}x^{\underline{2}} + \underline{B}x + \underline{C}$$

Where A, B, & C are some number

Identify the A, B, and C values for the following trinomials.

Rearrange into standard form (exponents in descending order) if necessary.

$$1x^2 + 7x + 12$$

In standard form? Y

$$\begin{array}{l}
 A = 1 \\
 B = 7 \\
 C = 12
 \end{array}$$

C =

$$1 - 3x + 5x^2$$

In standard form? N

$$5x^2 - 3x + 1$$

$$A = 5$$

$$B = -3$$

$$C = 1$$

Multiply using Distribution:

$$\begin{array}{l}
 (x+2)(x+3) \\
 \underline{x^2 + 3x + 2x + 6}
 \end{array}$$

$$\begin{array}{r|l}
 x & x^2 + 2x \\
 +3 & +3x + 6 \\
 \hline
 & x^2 + 5x + 6
 \end{array}$$

$$x^2 + 5x + 6$$

Now we'll learn how to un-do this!

$$\text{Factor } x^2 + 5x + 6$$

$$\begin{array}{r|l}
 6 & 6 \\
 1 & 2 \\
 \hline
 3 & 2
 \end{array}$$

Factor $x^2 + 5x + 6 = (x + \underline{?})(x + \underline{?})$
 $(x+2) (x+3)$

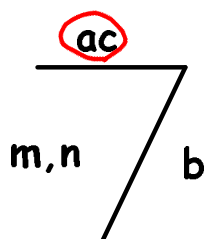
Steps: 1. Factor out a **GCF** if able.

2. Write: $= (x \quad)(x \quad) = (x \quad)(x \quad)$

3. Use the "**ac 7 b**" method. Identify a, b, and c to find m and n. Pay attention to the signs.

4. Check your answers with FOIL. The simplified should be the same as the original trinomial.

"ac 7 b" method:



$$\underline{a}x^2 + \underline{b}x + \underline{c} = (x + \underline{m})(x + \underline{n})$$

where $mn = c$ and $m + n = b$

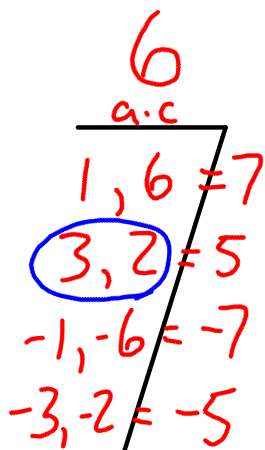
(Find factors of "c" that add up to "b")

Factor $x^2 + 5x + 6 = (x+3)(x+2)$

$a = 1$

$b = 5$

$c = 6$



$(x+2)(x+3)$

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Factor:

1.) $x^2 + 11x + 30 = (x+5)(x+6)$

$a=1$
 $b=11$
 $c=30$

30
 $\begin{array}{r|l} 1, +30 = 31 \\ 2, +15 = 17 \\ 3, +10 = 13 \\ 5, +6 = 11 \end{array}$ $\begin{array}{l} 11 \\ 6 \end{array}$

$x^2 + \underline{6x+5x} + 30$
 $x^2 + 11x + 30$

2.) $n^2 - 11n + 10 = (n-1)(n-10)$

$a=1$
 $b=-11$
 $c=10$

10
 $\begin{array}{r|l} 1, 10 = 11 \\ 2, 5 = 7 \\ -1, -10 = -11 \\ -2, -5 = -7 \end{array}$ $\begin{array}{l} -11 \\ 10 \end{array}$

$n^2 - \underline{10n-1n} + 10$
 $n^2 - 11n + 10$

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Factor:

$$3.) \quad m^2 + m - 90 = (m-9)(m+10)$$

$a=1$
 $b=1$
 $c=-90$

-90
 ac
 $-9, 10 = 1$
 $9, -10 = -1$

$m^2 + 10m - 9m - 90$
 $m^2 + m - 90$

$$4.) \quad n^2 + 4n - 12$$

7

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Factor:

$$5.) \quad 2n^2 + 6n - 108 = 2(n^2 + 3n - 54)$$

$$(2)(n)(n)$$

$$6.) \quad b^2 + 16b + 64$$

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